

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

Date of mailing (day/month/year)

28 April 2000 (28.04.00)

To:  
ROQUES, Sarah, E.  
J.A. KEMP & Co.  
14 South Square, Gray's Inn  
London WC1R 5LX  
ROYAUME-UNI

Applicant's or agent's file reference

PP/1021 PCT

IMPORTANT NOTIFICATION

International application No.

PCT/GB99/03738

International filing date (day/month/year)

10 November 1999 (10.11.99)

1. The following indications appeared on record concerning:

the applicant     the inventor     the agent     the common representative

Name and Address

ISIS INNOVATION LIMITED  
2 South Parks Road  
Oxford, Oxfordshire OX1 3UB  
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

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Facsimile No.

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Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

the person     the name     the address     the nationality     the residence

Name and Address

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Ewert House  
Ewert Place  
Summertown  
Oxford OX2 7BZ  
United Kingdom

State of Nationality

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State of Residence

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Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

the receiving Office                       the designated Offices concerned  
 the International Searching Authority               the elected Offices concerned  
 the International Preliminary Examining Authority               other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

I. Britel

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

## From the INTERNATIONAL BUREAU

PCT

**NOTIFICATION OF ELECTION**

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ETATS-UNIS D'AMERIQUE

<b>Date of mailing</b> (day/month/year) 23 June 2000 (23.06.00)	in its capacity as elected Office
<b>International application No.</b> PCT/GB99/03738	<b>Applicant's or agent's file reference</b> PP/1021 PCT
<b>international filing date</b> (day/month/year) 10 November 1999 (10.11.99)	<b>Priority date</b> (day/month/year) 10 November 1998 (10.11.98)
<b>Applicant</b>  ERRINGTON, Jeffrey	

**1. The designated Office is hereby notified of its election made:**

in the demand filed with the International Preliminary Examining Authority on:

26 May 2000 (26.05.00)

in a notice effecting later election filed with the International Bureau on:

2. The election  was

X

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p><b>The International Bureau of WIPO</b>  <b>34, chemin des Colombettes</b>  <b>1211 Geneva 20, Switzerland</b></p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p><b>Authorized officer</b></p> <p><b>Pascal Piriou</b></p> <p>Telephone No.: (41-22) 338.83.38</p>
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## ATENT COOPERATION TR

PCT

REC'D 20 DEC 2000

WIPO PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference N.78803A	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03738	International filing date (day/month/year) 10/11/1999	Priority date (day/month/year) 10/11/1998
International Patent Classification (IPC) or national classification and IPC C12Q1/18		
Applicant ISIS INNOVATION LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 26/05/2000	Date of completion of this report 15.12.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Herrero, M  Telephone No. +49 89 2399 8542



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/03738

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17.)*):  
**Description, pages:**

1-8                   as originally filed

**Claims, No.:**

1-19                   as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description,       pages:
- the claims,           Nos.:
- the drawings,       sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/03738

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 1-18
	No:	Claims 19
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-19
Industrial applicability (IA)	Yes:	Claims 1-19
	No:	Claims

2. Citations and explanations  
**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**SECTION V**

**2. CITATIONS AND EXPLANATIONS**

2.1 In view of the priority documents pertaining to the present application, the international patent application WO 99/18211 (publication date 15.04.99), cited in the International Search Report under the "P" category, is not to be regarded as state of the art according to Rule 64 (1) PCT as the date of priority of 10.11.98 is hereby validly claimed.

2.2 The following documents have been considered for the purposes of this report:

- D1: WO 97/00325 (also cited in the description)
- D2: WO 98/26087 (also cited in the description)
- D3: WO 98/26088 (also cited in the description)
- D4: WO 92/05244

2.3 Novelty and inventive step (Art. 33(2) and (3) PCT)

The present application does not satisfy the criteria set forth in Article 33(2) and (3) PCT because,

- a) the subject-matter of Claim 19 is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT)
- b) the subject-matter claimed (Claims 1-19) does not involve an inventive step (Rule 65(1)(2) PCT).

It transpires from the introductory passages in the description (see page 1, lines 5-23) that the technical problem to be solved by the present application relates to the provision of improved whole-cell assays for inhibitors of chromosome partitioning and cell division functions, which are devoid of the drawbacks derived from the use of close-related determination assays indicative of potential anti-microbial properties, in particular those assays described in D1, D2 or D3.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB99/03738

As a solution to the problem posed, the application proposes whole-cell assays based on the use of genetically engineered *Bacillus subtilis* strains which permit the detection/identification of inhibitors of cell division (i.e. putative antibiotic compounds) which act on a corresponding protein product of a pathogen (e.g. from *Staphylococcus aureus*) but not on that of the parent *Bacillus* strains.

It is clearly stated in the description (see page 5, lines 14-31 and pages 6-7), that the three main different approaches useful to carry out the detection assays of interest proposed in the application, are based on corresponding assays of the closest-state of the art documents D1, D2 and D3.

The only characterizing feature which distinguishes the three main types of assays hereby described from the corresponding assays disclosed in D1, D2 and D3, respectively, consists in the (total or partial) replacement of a target gene involved in cell division (e.g. *ftsZ*) in the subject *Bacillus* strain with a homologous gene (or an equivalent section of a homologous gene), likewise involved in cell division, obtained from a different microorganism (for example, from a pathogenic *Streptococcus pneumoniae*).

However, the partly or wholly replacement of a target gene of a well-characterized microorganism (e.g. *Escherichia coli*, *Bacillus subtilis*, *Saccharomyces cerevisiae*, etc) with a functionally equivalent gene originated from a different cell source in order to facilitate/make feasible the characterization of the latter gene in a (micro)biological system easy to be handled, is in fact a working feature which has been conventionally employed in related technical fields (for instance in D4) for a variety of standard purposes, e.g. for screening active ligands or antagonistic compounds.

Regarding the foregoing it would appear that, in order to solve the underlying technical problem, it would have been obvious to the person skilled in the art to apply the aforementioned working feature (e.g. a replacement with a functionally equivalent gene of a non-easily culturable pathogenic strain) with corresponding effect to the particular assay systems based on the use of the specific *B. subtilis* engineered strains taught by D1, D2 and D3 thereby arriving at microorganisms

equivalent to those intended in Claims 1-9 and 16 and at methods similar to those according to Claims 10-15 and 17-18. The subject-matter claimed according to Claims 1 to 18 does therefore not involve an inventive step (Article 33(3) PCT).

Additionally it is noted that, contrary to the requirements of Art. 33(2) and (3) PCT, the subject-matter of independent Claim 19 is neither novel nor inventive. The method of killing or inhibiting the growth of bacteria according to present Claim 19 cannot be distinguished from the corresponding methods according to Claim 11 of D2 or Claim 10 of D3. Moreover, it is pointed out that in the light of the supporting description, where no suitable agent capable of inhibiting the growth of the microorganisms of interest is characterized, Claim 19 merely recites an obvious *desideratum* (see in this regard item 2 in Section VIII below).

## **SECTION VII**

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D4 is not mentioned in the description, nor is this document identified therein.

## **SECTION VIII**

1. It is clear from the description that, to serve the purposes of the present invention, the microorganisms intended to be claimed according to Claims 1-3 should possess, at least, the following characterizing features:
  - (1) the required microorganisms belong to a *Bacillus* strain capable of growth and sporulation (see the description as a whole)
  - (2) in said *Bacillus* strain a cell division gene has been partly or wholly replaced by a homologous gene from another bacterium (cf page 7, lines 25-29)

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03738

(3) two artificially introduced reporter genes are present, a first reporter gene having a promoter which is dependent on active  $\sigma^F$  or  $\sigma^E$  factors, and a second reporter gene which provides a measure of the synthesis of the (inactive)  $\sigma^F$  or  $\sigma^E$  factor (cf page 5, lines 20-25; page 7 and page 7, lines 19-23).

Since independent Claim 1 does not contain these features it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

2. Independent Claim 19 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem. The following functional statements do not enable the skilled person to determine which agent is necessary to perform the intended method: "an agent which inhibits the growth of a micro-organism of any one of claims 1 to 9"
3. The following (underlined) expression "an artificially introduced reporter gene is present and is expressed in a manner related to a homologous gene expression product" used in the sentence bridging pages 1-2 and in independent Claim 1 is vague and open to interpretation and leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said Claim 1 (and of the claims dependent thereon/appended thereon) unclear, contrary to Article 6 PCT.

The same unclarity deficiency (Art. 6 PCT) arises from the passage on page 2, lines 17-20 as long as this recites: "... it is necessary that the homologous gene be capable of forming an expression product that is different in some respect from the expression product of the target gene."

4. It appears that on page 3, line 19 was meant to read " $\beta$ -glucuronidase".

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/GB 99/03738

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 9205244 A	02-04-1992	AU	652576 B	01-09-1994
		AU	8511591 A	15-04-1992
		CA	2092717 A	14-03-1992
		EP	0548165 A	30-06-1993
		JP	6500693 T	27-01-1994
		US	5482835 A	09-01-1996
		US	5739029 A	14-04-1998
WO 9918211 A	15-04-1999	AU	9791198 A	27-04-1999
WO 9700325 A	03-01-1997	EP	0833931 A	08-04-1998
		JP	11507549 T	06-07-1999
		US	6027909 A	22-02-2000
WO 9826087 A	18-06-1998	EP	0944734 A	29-09-1999
WO 9826088 A	18-06-1998	EP	0944735 A	29-09-1999

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 99/03738

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>				
IPC 7	C12Q1/18	C12Q1/68	C12N15/75	C07K14/32
				C12R1/07

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12Q C12N C07K C12R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 92 05244 A (UNIV DUKE) 2 April 1992 (1992-04-02) the whole document	1,2,10, 16,17
P,X	WO 99 18211 A (BENEGAL ANUPAMA N ;CADUS PHARMACEUTICAL CORP (US); KLEIN CHRISTINE) 15 April 1999 (1999-04-15) the whole document	1,2,10, 16,17
A	WO 97 00325 A (ISIS INNOVATION ;ERRINGTON JEFFERY (GB)) 3 January 1997 (1997-01-03) cited in the application the whole document	-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the International filing date but later than the priority date claimed

"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the International search

28 March 2000

Date of mailing of the International search report

05/04/2000

Name and mailing address of the ISA

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NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Hornig, H

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 99/03738

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 26087 A (ERRINGTON JEFFERY ;ISIS INNOVATION (GB); WU LING JUAN (GB)) 18 June 1998 (1998-06-18) cited in the application the whole document _____	
A	WO 98 26088 A (ERRINGTON JEFFERY ;ISIS INNOVATION (GB)) 18 June 1998 (1998-06-18) cited in the application the whole document _____	



## PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

KEMP &amp; Co

ROQUES, Sarah, E.

J.A. KEMP &amp; Co.

14 South Square, Gray's Inn

London WC1R 5LX

ROYAUME-UNI

12 MAY 2000

RECORDED

Date of mailing (day/month/year) 28 April 2000 (28.04.00)
--

Applicant's or agent's file reference PP/1021 PCT
--

## IMPORTANT NOTIFICATION

International application No. PCT/GB99/03738
---

International filing date (day/month/year) 10 November 1999 (10.11.99)
---

## 1. The following indications appeared on record concerning:

the applicant     the inventor     the agent     the common representative

Name and Address ISIS INNOVATION LIMITED 2 South Parks Road Oxford, Oxfordshire OX1 3UB United Kingdom
--

State of Nationality GB	State of Residence GB
Telephone No. +44-1865-272-411	
Facsimile No. +44-1865-272-412	
Teleprinter No.	

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

the person     the name     the address     the nationality     the residence

Name and Address ISIS INNOVATION LIMITED Ewert House Ewert Place Summertown Oxford OX2 7BZ United Kingdom
---

State of Nationality GB	State of Residence GB
Telephone No. +44-1865-272-411	
Facsimile No. +44-1865-272-412	
Teleprinter No.	

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

the receiving Office  
 the International Searching Authority  
 the International Preliminary Examining Authority

the designated Offices concerned  
 the elected Offices concerned  
 other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland
---

Authorized officer

I. Britel

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38



# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

ROQUES, Sarah Elizabeth  
J.A. KEMP & CO./A. KEMP & CO.  
14 South Square  
Gray's Inn  
London WC1R 5EXC'D 16 JUN 2000  
GRANDE BRETAGNE  
Action by *Leofser*

## NOTIFICATION OF RECEIPT OF DEMAND BY COMPETENT INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rules 59.3(e) and 61.1(b), first sentence  
and Administrative Instructions, Section 601(a))

Date of mailing  
(day/month/year)

13.06.00

Applicant's or agent's file reference  N. 78803A	IMPORTANT NOTIFICATION	
International application No.  PCT/ GB 99/ 03738	International filing date (day/month/year)  10/11/1999	Priority date (day/month/year)  10/11/1998
Applicant  ISIS INNOVATION LIMITED et al.		

1. The applicant is hereby notified that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

26/05/2000

2. This date of receipt is:

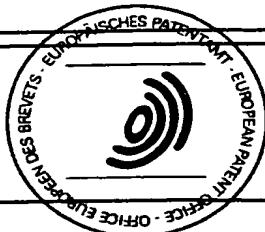
the actual date of receipt of the demand by this Authority (Rule 61.1(b)).  
 the actual date of receipt of the demand on behalf of this Authority (Rule 59.3(e)).  
 the date on which this Authority has, in response to the invitation to correct defects in the demand (Form PCT/IPEA/404), received the required corrections.

3.  **ATTENTION:** That date of receipt is AFTER the expiration of 19 months from the priority date. Consequently, the election(s) made in the demand does (do) not have the effect of postponing the entry into the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)). Therefore, the acts for entry into the national phase must be performed within 20 months from the priority date (or later in some Offices) (Article 22). For details, see the *PCT Applicant's Guide*, Volume II.

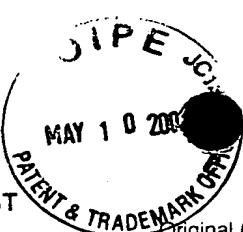
(If applicable) This notification confirms the information given by telephone, facsimile transmission or in person on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer  MORENO R A  Tel. (+49-89) 2399-2658
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PCT REQUEST



1/4

PP/1021 PCT

Original (for SUBMISSION) - printed on 10.11.1999 02:42:28 PM

0-1	For receiving Office use only International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4 0-4-1	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.90 (updated 15.10.1999)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United Kingdom Patent Office (RO/GB)
0-7	Applicant's or agent's file reference	PP/1021 PCT
I	Title of invention	BACILLUS STRAIN AND ASSAY METHOD
II	Applicant II-1 This person is: II-2 Applicant for II-4 Name II-5 Address:	applicant only all designated States except US ISIS INNOVATION LIMITED 2 South Parks Road Oxford, Oxfordshire OX1 3UB United Kingdom
II-6	State of nationality	GB
II-7	State of residence	GB
II-8	Telephone No.	+44-1865-272-411
II-9	Facsimile No.	+44-1865-272-412
II-10	e-mail	innovation@isis.ox.ac.uk
III-1	Applicant and/or inventor III-1-1 This person is: III-1-2 Applicant for III-1-4 Name (LAST, First) III-1-5 Address:	applicant and inventor US only ERRINGTON, Jeffrey 6 Sandfield Road Headington Oxford, Oxfordshire OX3 7RG United Kingdom
III-1-6	State of nationality	GB
III-1-7	State of residence	GB

**PCT REQUEST**

Original (for SUBMISSION) - printed on 10.11.1999 02:42:28 PM

IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: Name (LAST, First) Address:	agent  <b>PENNANT, Pyers</b> <b>Stevens Hewlett &amp; Perkins</b> <b>1 Serjeants' Inn</b> <b>Fleet Street</b> <b>London, Greater London EC4Y 1NT</b> <b>United Kingdom</b> <b>+44-171-936-2499</b> <b>+44-171-936-2498</b> <b>mail@shplondon.co.uk</b>
IV-1-3	Telephone No.	
IV-1-4	Facsimile No.	
IV-1-5	e-mail	
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	<b>BOYDELL, John, Christopher; WILKINSON, Stephen, John; MARLES, Alan, David; GAUNT, Robert, John</b>
IV-3	Additional agent(s)	agent
IV-3-1	Name (LAST, First)	<b>PERKINS, Sarah</b>
IV-3-2	Address:	<b>1 Serjeants' Inn</b> <b>Fleet Street</b> <b>London, Greater London EC4Y 1NT</b> <b>United Kingdom</b> <b>+44-171-936-2499</b> <b>+44-171-936-2498</b> <b>mail@shplondon.co.uk</b>
IV-3-3	Telephone No.	
IV-3-4	Facsimile No.	
IV-3-5	e-mail	
V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<b>EP: AT BE CH&amp;LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT</b>
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<b>JP US</b>
V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-6	Exclusion(s) from precautionary designations	<b>NONE</b>

**PCT REQUEST**

Original (for SUBMISSION) - printed on 10.11.1999 02:42:28 PM

VI-1	Priority claim of earlier national application		
VI-1-1	Filing date	10 November 1998 (10.11.1998)	
VI-1-2	Number	9824682.0	
VI-1-3	Country	GB	
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	8	-
VIII-3	Claims	4	-
VIII-4	Abstract	1	1021abs.txt
VIII-5	Drawings	0	-
VIII-7	TOTAL	17	
VIII-8	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-9	Fee calculation sheet	✓	-
VIII-16	Separate signed power of attorney		-
VIII-17	PCT-EASY diskette	-	diskette
VIII-18	Other (specified):	Patents Form 23/77	
VIII-19	Figure of the drawings which should accompany the abstract		
IX-1	Language of filing of the international application	English	
IX-1-1	Signature of applicant or agent		
IX-1-1	Name (LAST, First)	GAUNT, Robert, John	

**FOR RECEIVING OFFICE USE ONLY**

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

**PCT REQUEST**

PP/1021 PCT

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11-1	Date of receipt of the record copy by the International Bureau	
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**PCT (ANNEX - FEE CALCULATION SHEET)**

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(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only		
0-1	International Application No.		
0-2	Date stamp of the receiving Office		
0-4	Form - PCT/RO/101 (Annex) PCT Fee Calculation Sheet		
0-4-1	Prepared using	<b>PCT-EASY Version 2.90 (updated 15.10.1999)</b>	
0-9	Applicant's or agent's file reference	<b>PP/1021 PCT</b>	
2	Applicant	<b>ISIS INNOVATION LIMITED, et al.</b>	
12	Calculation of prescribed fees	fee amount/multiplier	total amounts (GBP)
12-1	Transmittal fee	T	⇒ 55
12-2	Search fee	S	⇒ 638
12-3	International fee Basic fee (first 30 sheets)	b1	285
12-4	Remaining sheets	0	
12-5	Additional amount	(X) 6	
12-6	Total additional amount	b2	0
12-7	b1 + b2 =	B	285
12-8	Designation fees Number of designations contained in international application	3	
12-9	Number of designation fees payable (maximum 10)	3	
12-10	Amount of designation fee	(X) 65	
12-11	Total designation fees	D	195
12-12	PCT-EASY fee reduction	R	-88
12-13	Total International fee (B+D-R)	I	⇒ 392
12-14	Fee for priority document Number of priority documents requested	1	
12-15	Fee per document	(X) 22	
12-16	Total priority document fee	P	⇒ 22
12-17	<b>TOTAL FEES PAYABLE (T+S+I+P)</b>		1,107
12-19	Mode of payment	<b>cheque</b>	

**VALIDATION LOG AND REMARKS**

13-2-2	Validation messages States	Green? More designations could be made. Please verify.
13-2-6	Validation messages Contents	Green? The international application contains no drawings. Please verify.

**PCT (ANNEX - FEE CALCULATION SHEET)**

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	<p>Yellow Accompanying item "separate signed power of attorney" has not been indicated as enclosed.</p>
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PCT



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### PCT-EASY INFORMATION SHEET

(For applicant use only, DO NOT submit this sheet with the international application)

#### VALIDATION LOG

Green?	States
Green?	More designations could be made. Please verify.
Contents	
Green? Yellow	The international application contains no drawings. Please verify. Accompanying item "separate signed power of attorney" has not been indicated as enclosed.

Before submitting the International Application, please carefully verify that:

- the information contained on printed Request form is correct;
- Box IX of the Request form has been signed;
- all elements of the international application as indicated in Box VIII of the Request form have been attached; and,
- the diskette containing the PCT-EASY zip file of the International Application has been enclosed and has been clearly labeled "PCT-EASY", with the applicant's or agent's file reference, and the first applicant's name.

#### ATTENTION

DO NOT modify any indications on the Request form printout. The attached PCT-EASY application has been locked. If an error or an omission is discovered at this time, you must copy the submitted application as a template and make the change or correction in a new application (using the submitted application as a template). You may create such a template by copying the submitted application from the "Stored Forms" folder to the "New PCT Forms" folder. Open the new (.WO) file created in the "New PCT Forms" folder, correct the errors and proceed with the submission process again.

The demand must be filed directly with one or more competent International Preliminary Examining Authority or Authorities are competent, with the one chosen by the applicant. The name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ EP



# PCT

## CHAPTER II

### DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only

Identification of IPEA		Date of receipt of DEMAND
<b>Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>		
International application No. PCT/GB99/03738		International filing date (day/month/year) 10 November 1999
(Earliest) Priority date (day/month/year) 10 November 1998		
Title of invention BACILLUS STRAIN AND ASSAY METHOD		
<b>Box No. II APPLICANT(S)</b>		
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  ISIS INNOVATION LIMITED Ewert House Ewert Place Summertown Oxford, OX2 7BZ UK		Telephone No.:  Facsimile No.:  Teleprinter No.:  
State (that is, country) of nationality: United Kingdom		State (that is, country) of residence: United Kingdom
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  ERRINGTON, JEFFERY 6 Sandfield Road Headington Oxford OX3 7RG UK		
State (that is, country) of nationality: United Kingdom		State (that is, country) of residence: United Kingdom
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  		
State (that is, country) of nationality: 		State (that is, country) of residence: 
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.		

**Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The following person is  agent  common representative

and  has been appointed earlier and represents the applicant(s) also for international preliminary examination.

is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.

is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

ROQUES, Sarah Elizabeth

J.A. KEMP & CO.,

14 South Square,

Gray's Inn,

London, WC1R 5LX,

United Kingdom.

Telephone No.:

+44 20 7405 3292

Faximile No.:

+44 20 7242 8932

Teleprinter No.:

23676

Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION**

Statement concerning amendments:\*

1. The applicant wishes the international preliminary examination to start on the basis of:

the international application as originally filed

the description  as originally filed

as amended under Article 34

the claims  as originally filed

as amended under Article 19 (together with any accompanying statement)

as amended under Article 34

the drawings  as originally filed

as amended under Article 34

2.  The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.

3.  The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English

which is the language in which the international application was filed.

which is the language of a translation furnished for the purposes of international search.

which is the language of publication of the international application.

which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

**Box No. V ELECTION OF STATES**

The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

**Box No. VI CHECK LIST**

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

1. translation of international application	:	sheets
2. amendments under Article 34	:	sheets
3. copy (or, where required, translation) of amendments under Article 19	:	sheets
4. copy (or, where required, translation) of statement under Article 19	:	sheets
5. letter	:	1 sheets
6. other (specify)	:	sheets

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received	not received
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

1. <input checked="" type="checkbox"/> fee calculation sheet	4. <input type="checkbox"/> statement explaining lack of signature
2. <input type="checkbox"/> separate signed power of attorney	5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form
3. <input type="checkbox"/> copy of general power of attorney; reference number, if any:	6. <input type="checkbox"/> other (specify):

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

*Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).*

ROQUES, Sarah Elizabeth  
AUTORISED REPRESENTATIVE

DATE: 25 May 2000

**For International Preliminary Examining Authority use only**

1. Date of actual receipt of DEMAND:
2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):
3.  The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.  The applicant has been informed accordingly.
4.  The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.
5.  Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

**For International Bureau use only**

Demand received from IPEA on: